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TITLE : NI-BASE SUPERALLOY WITH HIGH CORROSION RESISTANCE AND HIGH OXIDATION RESISTANCE FOR DIRECTIONAL SOLIDIFICATION USE, AND DIRECTIONALLY SOLIDIFIED CASTING WITH HIGH CORROSION RESISTANCE AND HIGH OXIDATION RESISTANCE

ABSTRACT : PROBLEM TO BE SOLVED: To provide an Ni-base superalloy excellent in oxidation resistance as well as in corrosion resistance, suitable for use in high temp. parts used particularly in fuels containing relatively large amounts of impurities such as S(sulfur) and also requiring high temp. oxidation resistance.

SOLUTION: This Ni-base superalloy has a composition consisting of, by weight, 12.1-16.5% Cr, 3.7-5.5% Al, 1.1-5.0% Nb, 4.1-9.5% Ta,  $\leq 10.0\%$  Co,  $\leq 5.0\%$  W,  $\leq 2.0\%$  Mo, and the balance Ni with inevitable impurities and practically free from Ti. This superalloy is excellent in both corrosion resistance and oxidation resistance and suitable for use in high temp. parts used for fuels containing relatively large amounts of impurities such as sulfur and requiring high temp. oxidation resistance. By applying this superalloy to a high temp. member, such as moving blades and stationary blades of a gas turbine, power generating efficiency and reliability can be improved to a greater extent.

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